

**MPD 1860.2**

**REVISION H**

**EFFECTIVE DATE: October 28, 2004**

**EXPIRATION DATE: October 28, 2009**

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# **MARSHALL POLICY DIRECTIVE**

**AD01**

## **RADIATION SAFETY PROGRAM**

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### DOCUMENT HISTORY LOG

Status (Baseline/ Revision/ Canceled)	Document Revision	Effective Date	Description
Revision	F	12/13/99	History log added with this revision; previous history contained in Directives Manager's Reference File. Document rewritten from MM 1860.2E to an MPD.
Revision	G	7/26/01	Page 3, Paragraph 4: added MPG 1860.1 and MWI 8715.15 and NPG 1441.1 to Applicable Documents; Page 3, Paragraph 6.1: added definition for authorized user; Page 5, added paragraph 8.b.2, "Providing a representative to serve as a member of the RSC."; Added to 8.d.2 "and radiation safety procedures"; paragraph 8.d.4 updated calibration requirement; paragraph 8, added "(9) Facility Organizational Work Instructions clearly define procedures for operating ionizing radiation producing equipment, line of radiation safety responsibility, and performing and documenting periodic checks of the facilities safety inspection. (10) Personnel required to work with radioactive material attend radiation safety training provided by the RSO annually in accordance with MWI 3410.1." Added to paragraph 8.e.2 "and provide the RSC with a detailed written report. In addition, provide quarterly status reports to the RSC. Paragraph 9, modified record keeping requirements.
Revision	H	10/28/2004	Changed MPG to MPR and NPG to NPR through document; changed font to Times New Roman; Section 8-changed Management support Office to Integrated Customer Support Department; replaced "will" with "shall" where indicated; Section 5 replaced "Initiator" to 'Requisitioner.'

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## 1. PURPOSE

The purpose of this Directive is to establish centralized control over the use of ionizing radiation sources to ensure that exposure shall be adequately controlled so as to prevent adverse effects on the health and safety of employees.

## 2. APPLICABILITY

This Directive is applicable to all Marshall Space Flight Center (MSFC) employees, onsite contractors, and onsite MSFC operations including contractor operations that involve the use of radioactive material or radiation-producing devices.

## 3. AUTHORITY

- a. MPD 1840.1, "MSFC Environmental Health Program"
- b. 10 CFR Part 20, "Standards for Protection Against Radiation"
- c. 10 CFR Part 30, "Rule of General Applicability to Domestic Licensing for Byproduct Material"
- d. 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities"
- e. 29 CFR 1960, "Basic Program Elements for Federal Employee Occupational Safety and Health Programs and Related Matters"

## 4. APPLICABLE DOCUMENTS

- a. MPR 1860.1, "Radiation Safety Procedural Requirements"
- b. MWI 8715.15, "Ground Operations Safety Assessment and Risk Mitigation Program"
- c. NPR 1441.1, "NASA Records Retention Schedules"
- d. MPR 5000.1, "Purchasing"

## 5. REFERENCES

MWI 5100.1, "Initiating Procurement Requisitions"

## 6. DEFINITIONS

Authorized User (AU). A person responsible for supervision of individual users of radioactive material. The AU is responsible for the safe use and storage of radioactive material. The AU should have a minimum of 3 months experience using radioactive material at MSFC. The AU

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should have a minimum of 40 hours of radiation safety training. The training requirement can be met by certain educational or work experience.

## 7. POLICY

- a. MSFC shall exercise centralized control over the use of ionizing radiation sources to ensure that exposure shall be adequately controlled so as to prevent adverse effects on the health and safety of employees.
- b. Processes involving exposure to ionizing radiation and hazardous types of nonionizing radiation (lasers, ultraviolet, radio frequency sources) shall ensure that such exposure is as low as is reasonably achievable (ALARA).
- c. All proposed uses of ionizing radiation, all procurement actions for sources of such radiation, and all facility and equipment design criteria for use of such radiation shall receive the written approval of the Radiation Safety Officer (RSO).

## 8. RESPONSIBILITIES

- a. Manager, Integrated Customer Support Department, through Occupational Medicine and Environmental Health Services (OMEHS), shall:

- (1) Designate an RSO and an alternate to coordinate the Radiation Safety Program.
- (2) Conduct pre-assignment medical examinations and advise on the assignment of any individual to radiation work.
- (3) Conduct periodic medical examinations and arrange for treatment of personnel exposed to excessive radiation.
- (4) Provide for dosimetry service for measuring personnel exposure to radiation.
- (5) Make special surveys of radiation areas and advise the Radiation Safety Committee (RSC) on the effectiveness of the program.
- (6) Maintain records of radiation exposure of each individual and monitor the accumulated exposure. Provide this information annually to all participants in the program or by the Nuclear Regulatory Commission (NRC).
- (7) Provide a physician as an advisory member to the RSC.
- (8) Coordinate the repair and calibration of portable radiation survey instruments approximately every 6 months. If an instrument cannot be repaired, it shall be removed from service and turned in to the Logistic Services Property Management Group.

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b. The Manager, Facilities Engineering Department, shall:

- (1) Ensure that plans for construction or modification of facilities and equipment that involve storage or use of sources of ionizing radiation have received a safety assessment in accordance with MWI 8715.15 and approval of the RSC before starting construction or modification work.
- (2) Provide a representative to serve as a member of the RSC.

c. The Director, Safety and Mission Assurance Directorate, shall be responsible for providing a representative to serve as a member of the RSC.

d. Directors/Managers/Team Leads/Supervisors shall ensure that:

- (1) Responsibility for every radioactive source used for research and development is clearly assigned to an “authorized user.”
- (2) Authorized users are trained to understand their responsibilities and radiation safety procedures.
- (3) Other laboratory personnel are aware of the potential radiological hazards and associated regulations within their work area.
- (4) All portable radiation survey instruments are calibrated as scheduled and repaired.
- (5) All portable radiation survey units which have been deemed “unrepairable” are replaced.
- (6) All radioactive sources included in the design of their equipment are identified.
- (7) Each source is reviewed to establish its necessity and to ensure that the design and procedures optimize safety.
- (8) The list of radioactive sources is sent to the RSO.
- (9) Appropriate organizational work instructions clearly define procedures for operating ionizing radiation producing equipment; delineating the radiation safety responsibility; and performing and documenting periodic facilities radiation safety inspections.
- (10) Personnel required to work with radioactive material attend radiation safety training provided by the RSO annually in accordance with MWI 3410.1.

e. The Radiation Safety Officer (RSO) shall:

- (1) Provide annual radiation safety training to personnel in the safe use of radioactive materials and radiation-producing devices.

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(2) Perform an annual audit of the RSP compliance and provide the RSC with a detailed written report.

(3) The RSO shall coordinate the RSP between users and the RSC. The RSO shall serve as secretary of the RSC and shall maintain all records pertaining to the RSP. The RSO shall keep the RSC informed at all times of the status of the RSP and shall perform the following duties:

(a) Review plans of proposed operations involving the use of radiation, in accordance with MWI 8715.15, to ensure that adequate protective measures are incorporated into the layouts and engineering drawings and consult with the RSC on these matters.

(b) Assist user organizations in developing operating procedures for radiological operations.

(c) Make periodic radiological safety surveys (at least annually) to ensure the degree of radiation protection provided is adequate and the provisions of Code of Federal Regulations (CFR), Title 10, Part 20, "Standards for Protection Against Radiation," and the provisions of this Directive are conformed to.

(d) Assist in the performance of leak tests on sealed sources.

(e) Impound radioactive material, as appropriate, and stop unsafe practices.

(f) Seal off contaminated areas.

(g) Require tests of potentially contaminated personnel.

(h) Approve all procurements and shipments of radioactive material and associated documentation.

(i) Approve purchase requests for all radiation-producing devices in accordance with MWI 5100.1.

f. The Director, Office of Procurement, shall:

(1) Ensure that contractors from whom radioactive materials are purchased are required to request shipping instructions from the MSFC RSO prior to shipment.

(2) Ensure proper approval of procurement requests per MWI 5100.1 prior to the purchase of any radioactive materials.

g. The Radiation Safety Committee shall:

(1) Approve the use of radioactive material and/or radiation-producing devices.

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(2) Ensure personnel qualifications, facilities, and user operating procedures are adequate for the use of radioactive material or radiation-producing devices.

(3) Ensure users are aware that provisions of CFR, Title 10, Part 20, “Standards for Protection Against Radiation,” shall be followed in all operations involving radiation, whether they be radioactive material or radiation-producing devices.

(4) Maintain oversight of Centerwide radon monitoring status, radiation training efforts, and other activities associated with radiation protection.

## 9. RECORDS

The following records shall be maintained/dispositioned by OMEHS 10 CFR 20 Subpart L and 29 CFR 1910.1020. Following the retention period, the records shall either be retained for historical purposes or destroyed.

Radiation Safety Program surveys/audits reports  
Personnel exposure records  
Radioactive source inventory  
Personnel training roster

Purchase requisitions generated in IFMP system are maintained by the responsible contracting officer in the Office of Procurement in accordance with MPR 5000.1 “Purchasing.”

## 10. MEASUREMENTS

None

## 11. CANCELLATION

MPD 1860.2G dated July 26, 2001

Original signed by  
Robin N. Henderson for

David A. King  
Director